

made of plastic or polymer material. The housing 94 includes the integral locking mechanism 90. The housing 94 includes a pivot surface 100. The pivot surface is located inside the main cavity of the housing which receives the resilient member 96. The resilient member 96 is substantially identical to the resilient member 74. The contacts 98 are identical to the contacts 72 except that the first side 76 has a rounded contact surface 102 and the second side 78 has a rounded contact surface 104. This embodiment illustrates that the contacts can have different shapes in different embodiments. In alternate embodiments, the first and second sides could have any suitable shapes. The third side 80 is located against both the resilient member 96 and the pivot surface 100. The pivot surface 100 is stationary and, unlike the resilient member 96, cannot be compressed.

As shown in FIG. 18, when the module 36 is connected to the connector 92, the contacts 98 rotate or pivot about the pivot area 100 as indicated by arrow 106. In this embodiment, in the upper corner the movement of the contact 98 is stopped with fixed housing corner 100 which contacts the contact 98 in such a way that the pressure on the bottom of metal contact edge is turning to force towards the board pad in the bottom right corner of the contact 98.

Implementation of the invention can consist of the two parts noted above, or only one of the two parts noted above. The first part can comprise the total solution idea of having contacts at the edge of the card to make the card thinner. The main target of this first part is to make card solution thinner by moving the connector mechanics of the card to the outside edge of the card area; at the outer peripheral edge of the card. The second part of idea is to reduce the space needed in card reader by moving the card removing detection into the card itself. Inside the card, the card removing detection system takes less space and the removal information can be noticed much earlier than with the today's connector solutions.

This solution provides a new and innovative way of implementing the card interface in a small area and with less height than today's conventional card interfaces. Different applications and functions can be controlled through the memory card by a touch-sensitive switch or sensor. For example, the invention can be used for "Hot-Swap" pre-warning. A touch-sensitive switch gives the possibility to get longer delay time than known solutions, which are integrated to the card or card reader. A touch-sensitive switch on the card makes possible the warning time to be at least doubled. A touch-sensitive switch can be used for controlling an ejector device of memory card reader. When a user of the device touches the card sensitive surface, the electronics of the host device or memory card can eject the card out of the reader. This is illustrated, generally, in FIG. 19. With the module 36 operably connected to the reader 32, when a user contacts the touch sensitive sensor 44, the controller 26 of the host 20 or the controller 64 inside the module 36 could signal actuation of the ejector 108.

Referring also to FIG. 20, in one type of embodiment the user input 44 could be part of a fingerprint detector 110 or 112. There are different possibilities to add intelligence for controlling use of the module 36; like many kinds of security features. Removal of the card 36 from the reader 32 could be prevented until the right person (as determined by the fingerprint detector 110 or 112) touches the module 36, or removal of the module 36 could be refused to selected people (as determined by the fingerprint detector 110 or 112). When the correct or approved user in a group of persons touches the module 36, that could be used to increase the amount of

applications and features available for use with the host device. Alternatively or additionally, when a correct or approved user touches the module 36, this could open the speed and availability to the increased selection of the data in the module 36. Thus, one or more applications or memory data in the device 20 could available for use by all users, but one or more applications or memory data in the device 20 or module 36 could be available for use with only approved users as determined by the fingerprint detector 110 or 112 using the user input 44.

In the embodiments described above, a user's finger is only detected touching the module in one location. In an alternate embodiment, one or more sensors could be provided to sense one or more of the user's finger(s) in multiple locations or multiple directions. For example, the sensor(s) could be adapted to sense a user touching the card between two fingers, such as grasping the card between the two fingers. In this example, two sensors could be located at two different sides or edges of the card. In one type of alternate embodiment the finger sensor could be located on a major surface of the housing, such as the top surface. Thus, this could be used for a module which is inserted and/or removed with the electronic device at least partially in the direction of the bottom face of the housing rather than along a longitudinal axis; such as a video game cartridge into a game player for example.

It should be understood that the foregoing description is only illustrative of the invention. Various alternatives and modifications can be devised by those skilled in the art without departing from the invention. Accordingly, the invention is intended to embrace all such alternatives, modifications and variances which fall within the scope of the appended claims.

What is claimed is:

1. An electrical connector comprising:

a housing;

a resilient member mounted in the housing, wherein the resilient member comprises electrically non-conductive flexible material; and

a plurality of substantially rigid electrical contacts mounted to the resilient member, wherein the electrical contacts each comprise a first side having a first contact area which is adapted to contact a removable electronic module, and wherein the electric contacts each comprise a second side, which is offset about 90 degrees from the first side, and which is adapted to contact a second contact area on an electronic component, wherein the electrical contacts are adapted to pivot relative to the housing.

2. An electrical connector as in claim 1 wherein the electrical contacts have a general triangular side profile.

3. An electrical connector as in claim 1 wherein a third side of the electrical contacts are located against the resilient member.

4. An electrical connector as in claim 1 wherein a third side of the electrical contacts are in movable contact with a portion of the housing.

5. An electrical connector as in claim 1 wherein, when removable electronic module is inserted into the electrical connector, the contacts are adapted to be moved by the removable electronic module in a first direction and the resilient member is adapted to move the contacts in a different second direction.